Module 3 Specific Interventions to Prevent MTCT

Total Time: 200 minutes

SESSION 1 Antiretroviral Treatment and Prophylaxis for the Prevention of MTCT

Activity/Method	Resources Needed	Time
Lecture and slide presentation	None	30 minutes

SESSION 2 Antenatal Management of Women who are HIV- Infected and Women with Unknown HIV Status

Activity/Method	Resources Needed	Time
Exercise 3.1 Antenatal care: case studies	None	40 minutes

SESSION 3 Management of Labour and Delivery of Women who are HIV-Infected and Women with Unknown HIV Status

Activity/Method	Resources Needed	Time
Exercise 3.2 Labour and delivery ARV prophylaxis: case studies	None	50 minutes

SESSION 4 Immediate Postpartum Care of Women who are HIV-Infected and Women with Unknown HIV Status

Activity/Method	Resources Needed	Time
Exercise 3.3 Immediate postpartum care of women who are HIV-infected and women with unknown HIV status: case studies	None	30 minutes

SESSION 5 Immediate Newborn Care of Infants who are HIV-Exposed and Infants with Unknown HIV Status

Activity/Method	Resources Needed	Time
Exercise 3.4 Immediate postnatal care of infants who are HIV-exposed: case studies	None	50 minutes

For all sessions, also have available the following:

- Overheads or PowerPoint slides for this Module (in Presentation Booklet)
- Overhead or LCD projector, extra extension cord/lead
- Flipchart or whiteboard and markers or blackboard and chalk
- Pencil or pen for each participant

Relevant Policies for Inclusion in National Curriculum

Session 1

- National policy/guidelines on antiretroviral treatment and prophylaxis for the prevention of MTCT (PMTCT)

Session 2

- National guidelines on antental care (ANC)/Management HIV-infected women and women with unknown status
- ANC and/or PMTCT confidentiality policy, policy on recording HIV status in patient's medical record (if not included in national guidelines)

Session 3

- National policy on management of labour and delivery for women infected with HIV and women with unknown HIV status
- National policy on testing and counselling during labour

Session 4

- National guidelines on immediate postpartum care of women infected with HIV and women with unknown HIV status

Session 5

- National guidelines on immediate newborn care of infants who are HIV-exposed and infants with unknown HIV status

The *Pocket Guide* contains a summary of each session in this module.

SESSION 1 Antiretroviral Treatment and Prophylaxis for the Prevention of MTCT

Advance Preparation

Ensure that national guidelines on ARV prophylaxis for prenatal care and ARV treatment for pregnant women appear in the Participant Manual. If not, have copies available for distribution. Familiarise yourself with these guidelines.

Total Session Time: 30 minutes

Trainer Instructions

Slides 1, 2 and 3

Begin by reviewing the module objectives listed below.

After completing the module, the participant will be able to:

- Name specific interventions for preventing mother-to-child transmission (PMTCT).
- List locally available and recommended antiretroviral (ARV) regimens.
- Discuss the antenatal management of women infected with HIV and women whose HIV status is unknown.
- Explain the management of labour and delivery in women infected with HIV and women whose HIV status is unknown.
- Explain postpartum care of women infected with HIV and women whose HIV status is unknown.
- Explain immediate newborn care of infants born to mothers who are HIV-infected and mothers whose HIV status is unknown.

Trainer Instructions

Slides 4, 5, 6, and 7

Introduce Session 1. Discuss the difference between ARV treatment and ARV prophylaxis. Mention that ARV treatment can be offered to women infected with TB.

ARV treatment: Long-term use of antiretroviral drugs to *treat* maternal HIV/AIDS and prevent PMTCT

ARV prophylaxis: Short-term use of antiretroviral drugs to *reduce HIV transmission* from mother to infant

Make These Points

- Antiretroviral *prophylaxis* does not treat maternal HIV or provide long-term protection for the infant.
- Antiretroviral treatment during pregnancy can improve a woman's health and decrease HIV transmission risk to the infant by reducing the maternal viral load.

ARV treatment

ARV drugs are effective for both treating maternal HIV infection and preventing MTCT. Several antiretroviral regimens reduce the risk of MTCT in both breastfeeding and non-breastfeeding women. The mechanisms by which these regimens prevent or reduce mother-to-child HIV transmission include decreasing viral replication in the mother, leading to a decrease in viral load in the infant and/or prophylaxis during and after exposure to the virus.

Pregnant women who are HIV-infected need ARV treatment for their own health should receive it, according to the treatment guidelines recommended by WHO. ARV treatment during pregnancy, when indicated, will improve the health of the woman and decrease the risk of transmission of HIV to the infant.

ARV treatment is recommended in the following situations: For detailed information, please refer to Appendix 1-A.

If CD4 testing is available, it is recommended that baseline CD4 counts be documented and ARV treatment offered to patients with:

- **WHO Stage IV disease, irrespective of CD4 cell count**
- **WHO Stage III disease** (including but not restricted to HIV wasting, chronic diarrhoea of unknown aetiology, prolonged fever of unknown aetiology, pulmonary TB, recurrent invasive bacterial infections, or recurrent or persistent mucosal candidiasis); **with consideration of using CD4 cell counts of less than 350/mm^3 to assist with decision-making**[a]
- **WHO Stage I or II disease with CD4 cell counts of 200/mm^3 or lower**[b]

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[a] CD4 count advisable to assist with determining need for immediate therapy. For example, pulmonary TB can occur at any CD4 level, and other conditions can be mimicked by non-HIV aetiologies (eg, chronic diarrhoea, prolonged fever).

[b] The precise CD4 count above 200/mm^3 at which ARV treatment should be initiated has not been established.

If CD4 testing is unavailable, it is recommended that ARV treatment be offered to patients with:

- **WHO Stage IV disease, irrespective of total lymphocyte count**
- **WHO Stage III disease** (including but not restricted to wasting, chronic diarrhoea of unknown aetiology, prolonged fever of unknown aetiology, pulmonary TB, recurrent invasive bacterial infections, or recurrent/ persistent mucosal candidiasis), **irrespective of total lymphocyte count**[c]
- **WHO Stage II disease, with a total lymphocyte count of less than or equal to 1,200/mm^3**[d]

ARV treatment during pregnancy

For women diagnosed with HIV during pregnancy and eligible for treatment with ARVs, treatment should be initiated as soon as possible. The start of treatment may be delayed until after the first trimester. However, when the woman is severely ill, the benefits of treatment outweigh any potential risk to the foetus. Efavirenz (EFV), an antiretroviral drug that is considered potentially teratogenic is not recommended until after the first trimester of pregnancy and should be avoided in women of childbearing age unless effective contraception can be ensured. Module 3 Appendix 3-B provides guidance for the use of antiretroviral drugs in pregnant women and women of childbearing age.

Pregnant women receiving ARV therapy

Pregnant women receiving ARV therapy require ongoing care and monitoring within the local HIV/AIDS programme. When co-infection with TB exists, additional drug therapy and clinical management are required to minimise side effects that may occur when ARV drugs are coadministered with TB therapy.

Trainer Instructions

Slides 8, 9 and 10

Discuss ARV prophylaxis using the information on the next page.

[c] The recommendation to start ARV treatment in all patients with stage III disease, without reference to total lymphocyte counts reflects a consensus of experts. The discussion took into account the need for a practical recommendation that allows clinical services and TB programmes in severely constrained settings to offer access to ARVs to their patients. As some adults and adolescents with stage III disease will be presenting with CD4 counts above 200/mm^3, some of them will receive antiretroviral treatment before the CD4 less than 200/mm^3 threshold is reached. However, if CD4 counts cannot be determined, the experts did not consider starting ARVs earlier in these patients to be problematic.

[d] A total lymphocyte count of less than or equal to 1200/mm^3 can be substituted for the CD4 count when the latter is unavailable and HIV-related symptoms exist. It is not useful in the asymptomatic patient. Thus, in the absence of CD4 cell testing, asymptomatic HIV-infected patients (WHO Stage I) should not be treated because there is currently no other reliable marker in severely resource-constrained settings.

Make These Points

- Emphasise that selection of ARV prophylaxis regimens is based on many factors.
- Antiretroviral prophylaxis alone will not protect breastfeeding infants from the risk of HIV.
- Until recently, the emphasis of PMTCT guidelines has been on short-course prophylaxis (eg short-course ZDV or short-course NVP) in resource-constrained settings.
- New recommendations from WHO (2004) emphasise longer, combination prophylaxis regimens, where feasible, but recognise the need for short-course prophylaxis where the longer course is not yet provided or feasible.

ARV prophylaxis

Women who do not need treatment (ie women who are not "eligible" for treatment based on the criteria above), or do not have access to treatment, should be offered prophylaxis to prevent MTCT using one of a number of ARV regimens known to be effective. ARV prophylaxis regimens vary and are selected based on efficacy, safety, drug resistance, feasibility, and acceptability. Please refer to Appendix 3-A for a complete listing of ARV prophylaxis regimens.

The first choice prophylaxis regimen for PMTCT

Zidovudine (ZDV) starting at 28 weeks of gestation, or as soon as possible thereafter and intrapartum every 3 hours until delivery plus single-dose nevirapine (NVP) at the onset of labour for the mother, and single-dose NVP plus one week of ZDV for the infant.

Please refer to Appendix 3-A for a complete listing of ARV prophylaxis regimens.

Trainer Instructions

Discuss the use of ZDV, NVP, and 3TC (see Appendices 3-A and 3-B) by presenting the information below.

Drug information

Zidovudine (ZDV, AZT)

- Absorbed rapidly and completely after oral administration
- Prenatal and neonatal exposure to ZDV is generally well tolerated
- Mild anaemia may occur but usually resolves when treatment ends
- May be taken with or without food

Nevirapine (NVP)

- Absorbed rapidly and completely after oral administration and crosses the placenta quickly
- Long half-life that benefits the infant
- May be taken with or without food

Lamivudine (3TC)

- Absorbed rapidly and completely after oral administration
- May safely be taken with other medications that treat HIV-related symptoms
- May be taken with or without food

WHO recommendations on longer prophylaxis regimens

Until recently, the emphasis of PMTCT guidelines has been on short-course prophylaxis (eg short-course zidovudine or short-course nevirapine in resource-constrained settings). New recommendations from WHO (2004) emphasise longer, combination prophylaxis regimens, where feasible, while recognising the need for short-course prophylaxis where longer regimens have not been provided or are not feasible.

Note: NVP is not recommended for concurrent use with rifampin—a consideration when TB treatment is indicated.

3TC has been known to increase in concentration when taken with cotrimoxazole (TMP/SMX)—a drug commonly used in PCP prophylaxis. Altering dosages of either drug, however, is not recommended.

SESSION 2 Antenatal Management of Women who are HIV-Infected and Women with Unknown HIV Status

Advance Preparation

Ensure that the national policy on antenatal management of women who are HIV-Infected and women with unknown HIV status appears in the Participant Manual. If not, have copies available for distribution. Familiarise yourself with these policies.

Review Exercise 3.1: Antenatal care case studies to be sure they reflect local customs, issues, names, and policies. Ask local healthcare workers to help you adapt the case studies if necessary.

Total Session Time: 40 minutes

Trainer Instructions

Slides 11 and 12

Introduce the discussion on antenatal care.

Make These Points

- Testing and counselling serve as the gateway to PMTCT interventions.
- Early diagnosis and treatment of STIs reduces MTCT of HIV infection.
- A comprehensive approach to the care of the woman who is HIV-infected is important for a successful PMTCT programme.
- Discuss routine ANC for all women, using the information on the next page.

Antenatal care

Antenatal care improves the general health and well being of mothers and their families. Given the rapid spread of HIV infection worldwide, all pregnant women may be considered at risk for acquiring HIV infection.

The ANC setting is a main source of health care for women of childbearing age. By integrating PMTCT services into essential ANC services, healthcare programmes can improve care—and pregnancy outcomes—for all their clients.

This session addresses integrating PMTCT services for and antenatal management of women infected with HIV and women of unknown HIV status within the context of ANC programmes.

Antenatal interventions can reduce the risk of MTCT. Good maternal health care helps women with HIV infection stay healthy longer and care for their children better. When mothers die prematurely, their children face higher rates of illness and death.

For the successful implementation of PMTCT programmes, the following elements need to be included as part of ANC:

- Health information and education
- Education about safer sex practices and HIV
- HIV testing and counselling
- Partner HIV testing and counselling
- Interventions to reduce the risk of MTCT
- Infant-feeding counselling and support for Safe Motherhood including malaria and TB treatment
- Diagnosis and treatment of sexually transmitted infections (STIs)

Trainer Instructions

Slide 13

Discuss routine ANC and ANC for women who are HIV-infected, using the information below.

Make These Points

- Confidential HIV testing services must be made available to all women.
- Women whose HIV status is unknown are considered at risk for MTCT and counselled accordingly.
- Women whose HIV status is unknown should be aware that testing can take place at any time during their care.
- Screening for and treating opportunistic infections and common illnesses can greatly improve the quality of life for pregnant women living with HIV infection.

Antenatal care of women infected with HIV

ANC for women infected with HIV includes the basic services recommended for all pregnant women. However, obstetric and medical care should be expanded to address the specific needs of women infected with HIV. (See Table 3.1.)

HIV infection in women of childbearing age presents a great challenge in resource-limited settings. Determining a woman's HIV status is the first step in providing appropriate treatment, care and support services, including access to antiretroviral prophylaxis when indicated. Availability of rapid testing allows women to be tested and receive their HIV test results at the first prenatal visit. When HIV status is known, mothers can be evaluated for ARV eligibility and offered the ARV treatment and prophylaxis indicated, if available.

In some situations, because of the lack of accessible testing services or because a woman refuses to be tested, her HIV status may remain unknown. In such circumstances, the woman should be considered at risk for MTCT, and she should be counselled accordingly during ANC. Women of unknown HIV status should be made aware that testing is available at later ANC visits and be reminded of the benefits of knowing their HIV status.

Trainer Instructions

Slides 14, 15 and 16

Discuss the prevention of opportunistic infections as well as other recurrent or chronic infections.

Preventing opportunistic infections

Preventing opportunistic infections (OIs) can reduce rates of illness and death among pregnant women who are HIV-infected. It also can reduce the risk of adverse pregnancy outcomes, such as preterm labour and delivery, which can increase the risk of MTCT.

Prevention, screening, and treatment for TB, a leading cause of mortality among persons who are HIV-infected, is particularly important. Module 7, Appendix 7-A contains information on tuberculosis.

Healthcare workers should pay special attention to signs and symptoms of possible opportunistic infections and follow protocols for prophylaxis of common problems. In Module 7, Appendix 7-C provides information about *pneumocystis carinii* pneumonia (PCP) prophylaxis.

Assessment and management of HIV-related illnesses

HIV-related illnesses can increase the risk of MTCT. Women should be monitored for signs or symptoms of progressive HIV/AIDS.

Recurrent or chronic infection

Women infected with HIV are susceptible to other infections that can be treated in keeping with local protocols. Examples include the following:

- TB
- Urinary tract infections
- Respiratory infections
- Recurrent vaginal candidiasis
- Malaria

Psychosocial and community support

Pregnancy is a time of unique stress, and healthcare workers may consider assessing the amount of support a woman is receiving from family and friends. Women with HIV usually have additional concerns related to their own health, their child's health, confidentiality, and the possibility that their HIV status might be disclosed to other people. Referrals to AIDS support organisations and clubs should be made.

Trainer Instructions

Explain the essential package of integrated ANC services, using the chart on the next page.

Make These Points

- Integrated antenatal care services are the most successful approach to caring for pregnant women with HIV.
- Comprehensive obstetric and medical care for women who are HIV-infected requires specific interventions to reduce MTCT.

Table 3.1 Essential Package of Integrated Antenatal Care Services
Client history: Obtain routine data including medical, obstetric, and psychosocial history. Determine drug history, known allergies, and use of alternative medicines such as herbal products.
Physical exam and vital signs: Include visual and hands-on exam and assess for current signs or symptoms of illness including AIDS, tuberculosis (TB), malaria and sexually transmitted infections (STIs).
Abdominal exam: Include speculum and bimanual exams, where acceptable and feasible.
Lab diagnostics: Perform routine serology for syphilis including testing for anaemia. Perform HIV testing as per country protocol based on availability and informed consent. When woman is HIV-positive, obtain CD4 count and RNA polymerase chain reaction (PCR) (measures viral load, response to ARV treatment), when available.
Tetanus toxoid immunisations: Administer when appropriate.
Nutritional assessment and counselling: Include iron and folate supplementation, monitor for anaemia, adequate caloric and nutrient intake, and recommend realistic diet adjustments based on local resources.
STI screening: Include risk assessment for STIs. Diagnose and treat early according to protocols. Counsel about STIs, signs and symptoms and increased risk of HIV transmission. Educate to avoid transmission or re-infection.
Opportunistic Infection (OI) Prophylaxis: Provide prophylaxis based on country protocols.
Screening and care for other infections: Screen and treat any locally prevalent parasitic, bacterial, or fungal infections, including helminth infections. Treat herpes, candidiasis, PCP, and any other AIDS-related OIs.
Tuberculosis (TB): Co-infection with tuberculosis is the leading cause of HIV mortality. All women presenting for ANC services with a cough of more than 2 weeks' duration should be screened for TB, regardless of HIV status. Specific treatment protocols are recommended for women infected with HIV, pregnant women, and women already receiving antiretroviral therapy.
Antimalarials: Malaria is a major cause of high maternal and infant morbidity and mortality and is linked to increased MTCT (via placental infection). Malaria prophylaxis is needed in endemic areas; identify acute cases and treat aggressively and promptly. Use insecticide on bed nets where possible.
ARV prophylaxis during pregnancy: Provide in accordance with country PMTCT protocol.
ARV treatment during pregnancy: Refer for treatment when indicated according to country protocols.
Counselling on infant feeding: All women require infant-feeding counselling and support. When women do not know their HIV status, exclusive breastfeeding should be promoted and supported. Women infected with HIV should consider replacement feeding when it is feasible, acceptable, affordable, accessible, and safe; otherwise, exclusive breastfeeding with early cessation is recommended.
Counselling on pregnancy danger signs: Provide women with information and instructions on seeking early care for pregnancy complications such as bleeding, fever and pre-eclampsia.
Counselling on HIV/AIDS danger signs: Provide women with information and instructions on seeking health care for symptoms of HIV disease progression, such as opportunistic infections, chronic persistent diarrhoea, candidiasis, fever or wasting. Refer women to AIDS treatment programmes when indicated and available.
Partners and family: HIV-related stress and lack of support have been linked to progression of HIV infection. Refer women, partners, and families to community-based support clubs or organisations when possible.
Effective contraception plan: Counsel about consistent use of condoms during pregnancy, as well as throughout postpartum and breastfeeding periods to avoid new infection, re-infection and further transmission. Include long-term family planning with partner involvement when possible.

Trainer Instructions

Familiarise participants with national guidelines on ANC and PMTCT and lead a discussion based on antenatal care case studies.

Exercise 3.1 Antenatal care: case studies	
Purpose	To review national policies on ANC and PMTCT. To review antenatal management in the context of women who are HIV-infected.
Duration	25 minutes
Introduction	The purpose of this exercise is to review national policies on ANC and PMTCT, and review ANC management in the context of HIV/AIDS.
Activities	▪ Distribute copies of the national policies on ANC and PMTCT. ▪ Ask participants to take a few minutes to become familiar with the policies. ▪ Write the key points of the policies on a flipchart. ▪ Ask participants to comment on whether these policies are being followed in their respective clinical settings. ▪ Ask participants about any challenges or obstacles they may experience when putting these policies into practice. ▪ Distribute copies of the ANC case studies. ▪ Ask for a volunteer to read the narrative section of the first case study. ▪ Ask all participants for answers to the questions posed in the case study. ▪ Repeat above steps for second case study in Exercise 3.1. ▪ Determine whether any participants disagree with any of the answers offered. ▪ Ask whether this case study is similar to cases the participants may encounter in ANC. ▪ Write exceptions (ie, ways in which the participants' experiences differ from the case studies) on the flipchart. ▪ Ask participants to describe a particular case that has challenged them in the ANC clinical setting, and how they resolved the case.
Debriefing	▪ Summarise how the local policies are reflected in local practice. ▪ Remind participants that the policies serve as practice guidelines. ▪ Mention that each case is as unique as the person or circumstances involved.

Exercise 3.1 Antenatal care: case studies

Case study 1

Selma, a 22-year-old single woman, tested HIV-positive at her first antenatal visit at 24 weeks gestation. At that time, she received post-test counselling and was encouraged to bring her partner in for testing. She is now 28 weeks pregnant with her first child.

What are the ANC management steps that should be taken?

Case study 2

You are an antenatal clinic midwife. Louisa, your patient, is 30 weeks pregnant. When you ask her about her delivery plans, she says that she wants to have the baby at home. She informs you that this is her third child and even though she is HIV-infected, this pregnancy (like her previous two) has been a healthy pregnancy. You can see that she is determined to have a home delivery.

What do you tell Louisa?

Consider how you would approach meeting ANC and PMTCT care needs in the context of home delivery. What would your next steps be?

SESSION 3 Management of Labour and Delivery of Women Infected with HIV and Women with Unknown HIV Status

Advance Preparation

Ensure that the national policy on management of labour and delivery in women who are HIV-infected and women of unknown HIV status appears in the Participant Manual. If not, have copies available for distribution. Familiarise yourself with these policies.

Review the case studies to make sure they reflect local customs, issues, names, and policies. Ask local healthcare workers to help you adapt the case studies if necessary.

Total Session Time: 50 minutes

Trainer Instructions

Slides 17, 18, 19 and 20

Discuss interventions that can reduce mother-to-child transmission during labour and delivery.

Make These Points

- Reducing foetal exposure to infected maternal blood and body fluids reduces MTCT.
- Universal precautions can help reduce MTCT in the high-risk labour and delivery setting.
- Safer practices in labour and delivery can minimise MTCT risk.

A significant number of infants, who are born to women who are HIV-infected, become infected during labour and delivery. Adhering to standard practices for delivery and to procedures that reduce foetal exposure to maternal blood and secretions can reduce the risk of MTCT.

Interventions that can reduce MTCT include the following:

Administer ARV treatment and prophylaxis during labour in accordance with national protocols.

- Continue ARV treatment/prophylaxis or implement ARV prophylaxis at labour to reduce maternal viral load and provide protection to the infant.

Use good infection prevention practices for all patient care.

- Use universal precautions, which include use of protective gear, safe use and disposal of sharps, sterilisation of equipment, and safe disposal of contaminated materials.

  (For additional information, see *Module 8: Safety and Supportive Care in the Work Environment.)*

Minimise cervical examinations.

- Perform cervical examination only when absolutely necessary and with appropriate clean technique.

Avoid prolonged labour.

- Consider using oxytocin to shorten labour when appropriate.
- Use noninvasive foetal monitoring to assess need for early intervention.

Avoid routine rupture of membranes.

- Use a partogram to measure the progress of labour.
- Avoid artificial rupture of membranes, unless necessary.

Avoid unnecessary trauma during delivery.

- Avoid invasive procedures, including scalp electrodes or scalp sampling.
- Avoid routine episiotomy.
- Minimise the use of forceps or vacuum extractors.

Minimise the risk of postpartum haemorrhage.

- Actively manage the third stage of labour.
- Give oxytocin immediately after delivery.
- Use controlled cord traction.
- Perform uterine massage.
- Repair genital tract lacerations.
- Carefully remove all products of conception.

Use safe transfusion practices.

- Minimise the use of blood transfusions.
- Use only blood screened for HIV and when available syphilis, malaria, and hepatitis B and C.

Trainer Instructions

Slide 21

Discuss when to consider elective cesarean section versus vaginal delivery.

Considerations regarding mode of delivery

Cesarean section, when performed before the onset of labour or membrane rupture, has been associated with reduced MTCT.

Consider the benefits and risks of vaginal delivery versus elective caesarean section, including the safety of the blood supply and the risk of complications.

Trainer Instructions

Slides 22 and 23

Use the information below to discuss HIV testing and methods for reducing the risk of MTCT during labour in women with unknown HIV status.

Make These Points

- A mother who tests HIV-positive after childbirth can choose to provide post-exposure prophylaxis for her infant.
- HIV testing after childbirth can influence a mother's choice of feeding options.
- If a mother tests negative or refuses testing, encourage exclusive breastfeeding.

Trainer Instructions

Lead a discussion based on the case study exercise on the next page.

Exercise 3.2 Labour and delivery ARV prophylaxis: case studies	
Purpose	To review national policies on testing and counselling during labour. To discuss administering ARV prophylaxis during labour and delivery.
Duration	25 minutes
Introduction	Using case studies, the purpose of this exercise is to review national policies on testing and counselling during labour, and to discuss administering ARV prophylaxis during labour and delivery.
Activities	▪ Refer to the Participant Manual or distribute copies of the handout about national/local policies on testing and counselling in labour and ARV prophylaxis. ▪ Ask participants to take a few minutes to read the policies. ▪ On a flipchart, record the policies' main points. ▪ Ask participants to comment on their ability to follow the policies in their own clinical settings. ▪ Ask participants about any challenges or obstacles to putting these policies into practise. ▪ Distribute copies of the case studies. ▪ Ask a participant to read the narrative section of the first case study. ▪ Ask the group for answers to the questions posed after each case study. ▪ Write participants' answers on the flipchart. ▪ Ask participants whether they disagree with any of the answers offered. ▪ Do the same with the next case study in Exercise 3.2. ▪ Ask participants if any of the case studies are similar to cases they may have encountered in ANC and labour and delivery clinical settings. ▪ Write exceptions (ie, ways in which the participants' experiences differ from the case studies) on the flipchart. ▪ Ask participants if they can describe a particular case that has challenged them in the ANC clinical setting. ▪ Ask them to describe what was done to resolve the challenges.
Debriefing	▪ Summarise for participants how closely the local policies are reflected in local practice. ▪ Mention to participants that each case is as individual as the person or circumstances involved.

Exercise 3.2 Case Studies—Labour and delivery ARV prophylaxis for mother

Case study 1

Consuelo arrives at the labour and delivery unit. This is her first baby. She hands you her ANC card, which indicates that she was tested during pregnancy and is infected with HIV. Her water broke 4 hours ago and her contractions are now less than 3 minutes apart. Consuelo earlier received a NVP tablet to take at home. When you examine her, you find that she is 5 centimetres dilated.

After providing general support during labour, what is your first priority?

If you discover that she has not taken her NVP tablet, what do you do?

Case study 2

Deborah arrives to deliver. This is her fourth child and she tells you that she has had a good pregnancy. Deborah has received no antenatal care and was never tested for HIV. At this time, her contractions are regular and about 2 minutes apart. During your examination, you find that she is 7 centimetres dilated.

Considering your national policy on testing and counselling during labour and delivery, what are your next steps?

SESSION 4 Immediate Postpartum Care of Women who are HIV-Infected and Women with Unknown HIV Status

Advance Preparation

Ensure that national guidelines on immediate postpartum care of women who are HIV-infected and women with unknown HIV status appear in the Participant Manual. If not, have copies available for distribution. Familiarise yourself with these policies.

Review the case studies to make sure the materials reflect local customs, issues, names, and policies. Ask local healthcare workers to help you adapt the case studies if necessary.

Total Session Time: 30 minutes

Trainer Instructions

Slides 24, 25, 26, 27, 28 and 29

Using the information below, discuss postpartum care of women infected with HIV, including newborn feeding, signs and symptoms of postnatal infection, and family planning.

Make These Points

- Women who are HIV-infected require additional postpartum monitoring and support.
- Women taking ARVs require nutritional support and guidance.
- Infant-feeding support is required during the first two years of a child's life with special attention provided any time a mother elects to change her feeding practice.
- Early identification and treatment of infections can improve quality of life.
- Postpartum family planning can include both partners and prevent future HIV infection.

Postpartum care of women infected with HIV

When providing postpartum care to women infected with HIV, healthcare workers may follow routine protocols, but several areas require additional attention:

Continuing care

Encourage and make plans for continued health care in the following areas:

- Routine gynaecologic care, including pap smears, if available.
- Ongoing treatment, care and support for HIV/AIDS and opportunistic infections along with nutritional support.
- Treatment and monitoring of TB and malaria.
- Referral for antiretroviral treatment (or treatment eligibility)
- Referral for prophylaxis and treatment of OIs.

(For additional information, see *Module 7, Linkages to Treatment, Care and Support for Mothers and Families with HIV Infection.*)

Newborn feeding

- Ensure that the mother chooses feeding options before she leaves the facility or hospital after delivery.
- Support the mother's choice of feeding option. (See *Module 4, Infant Feeding in the Context of HIV Infection*, for additional information).
- Provide training and observe proper feeding technique prior to discharge.

Signs and symptoms of postnatal infection

Review the following symptoms of infection before the new mother leaves the clinic or hospital and provide her with information on where to seek treatment for:

- Burning with urination
- Fever
- Foul smelling lochia
- Cough, sputum, shortness of breath
- Redness, pain, pus, or drainage from incision or episiotomy
- Severe lower abdominal tenderness

Education

- Instruct the mother on perineal and breast care
- Ensure that the mother knows how to dispose of potentially infectious materials such as lochia and blood-stained sanitary pads

Family planning

Contraception and child spacing should be discussed with every woman during antenatal care and again in the immediate postpartum period. The main family planning goals for the woman who is HIV-infected are:

- Preventing unintended pregnancy
- Appropriate child spacing, which can help reduce maternal and infant morbidity and mortality

(See *Module 2, Overview of HIV Prevention in Mothers, Infants and Young Children* for additional information.)

Trainer Instructions

Slide 30

Discuss the benefits of HIV testing after delivery for women with unknown HIV status, as outlined below.

Postpartum care of women with unknown HIV status

Women whose HIV status is unknown should receive the same postpartum care as women with HIV infection (outlined above). They should be encouraged to be tested for HIV and to follow national recommendations for feeding their infants.

HIV testing after delivery can assist women infected with HIV to:

- Initiate post-exposure ARV prophylaxis for the infant
- Choose safer infant-feeding options

Trainer Instructions

Lead an interactive discussion based on the case study exercise below.

Exercise 3.3 Immediate postpartum care of women who are HIV-infected: case studies	
Purpose	To review postnatal management of the woman with HIV infection.
Duration	25 minutes
Introduction	The purpose of this exercise is to review postpartum management practices in the context of HIV infection.
Activities	▪ Distribute copies of the postnatal case studies to the participants. ▪ Ask a participant to read the narrative section of each case study. ▪ Ask participants for answers to the questions at the end of each case study. ▪ Ask participants if they disagree with any of the answers offered. ▪ Ask participants if any of these case studies is similar to cases they may have encountered in their facilities. ▪ Write exceptions (ie, ways in which the participants' experiences differ from the case studies) on the flipchart. ▪ Ask participants if they can describe a particular case that has challenged them in the postnatal clinical setting. ▪ Ask them to describe what was done to resolve the challenges.

Debriefing	▪ Review the major areas of importance including routine postnatal care, counselling on infant feeding, and referral for ongoing care. ▪ Mention how each case is as individual as the person and circumstances involved.

Exercise 3.3 Immediate postpartum care of women who are HIV-infected: case studies

Case study 1

Deborah presented to the labour and delivery ward without having had an HIV test during her pregnancy. The result of the rapid HIV test performed during labour was positive. When told of the test result, Deborah became upset but agreed to take the NVP tablet. Subsequently, she had an uneventful labour and delivered a 2.4 kg healthy boy she named William. Although breastmilk substitute is available at the clinic, Deborah is determined to breastfeed her baby. It is now two hours after her delivery and she is resting. Her mother and husband are staying with her.

What postpartum care does she require?

What HIV-specific services does she need?

What can you accomplish before she leaves the facility in 24 hours?

Case study 2

Consuelo, who is HIV-positive, has been following the ZDV and NVP regimen for herself and her child. After a short labour, she delivered a 2 kg girl named Samantha. Consuelo has chosen to use breastmilk substitute; she will be discharged in 48 hours.

What postpartum care does she require?

What HIV-specific services does she need?

What can you do to support her infant-feeding choice?

What services can you provide to her before she leaves in 24 hours?

What continuing support do you anticipate providing to her?

SESSION 5 Immediate Newborn Care of Infants who are HIV-Exposed and Infants with Unknown HIV Status

Advance Preparation

Ensure that national guidelines on immediate newborn care of infants who are HIV-exposed and infants with unknown HIV status appear in the Participant Manual. If not, have copies available for distribution.

Familiarise yourself with these policies. Be sure that you have enough copies to distribute to all participants.

Review the case studies to make sure the materials reflect local customs, issues, names, and policies. Ask local healthcare workers to help you adapt the case studies, if necessary.

Total Session Time: 50 minutes

Trainer Instructions

Slides 31, 32 and 33

Discuss immediate newborn care of infants, using the information below.

Make These Points

- Universal precautions should always be followed when caring for newborn infants.
- BCG is not given to infants who are HIV-infected in low-prevalence countries.

The immediate care of the newborn exposed to HIV follows standard practice. Regardless of the mother's HIV status, all infants are kept warm after birth and are handled with gloves until maternal blood and secretions have been washed off.

Immediate newborn care

- Maintain universal precautions throughout care and treatment. Wear gloves when giving injections, and clean all injection sites with surgical spirits. Dispose of all needles according to facility policy.
- Clamp cord immediately after birth, and avoid milking the cord. Cover the cord with gloved hand or gauze before cutting.
- Wipe infant's mouth and nostrils with gauze when the head is delivered.
- Use suction only when meconium-stained liquid is present. Use either mechanical suction at less than 100 mm Hg pressure or bulb suction, rather than mouth-operated suction.

- Wipe the infant dry with a towel.
- Determine the mother's feeding choice. If she is using breastmilk substitute, place the infant on her body for skin-to-skin contact and provide help with the first feeding. If she is breastfeeding, place the infant on the mother's breast.
- Administer vitamin K, silver nitrate eye ointment, and Bacille Calmette Guérin (BCG) according to national guidelines.

Trainer Instructions

Slides 34, 35, 36, and 37

Discuss care of newborns who are HIV-exposed, using the country protocol and the information below.

Make These Points

- Routine assessment for signs and symptoms of HIV infection is essential.
- HIV testing, immunisation against infectious diseases of childhood, and screening and prevention of TB and malaria are part of ongoing healthcare.
- Even with prophylaxis, infants who are HIV-exposed are at increased risk of illness and challenges related to growth and development.
- PCP prophylaxis is recommended for infants who are HIV-exposed, starting at six weeks and continuing until HIV-infection can be ruled out.

ARV prophylaxis

ARV prophylaxis should be administered to the newborn according to country protocol. (See Appendix 3-A).

Follow-up newborn care

Care of the newborn baby should follow standard practices. Care for babies exposed to HIV should follow the approach described in *Module 7, Linkages to Treatment, Care and Social Support for Mothers and Families with HIV Infection.*

Infants born to mothers with unknown HIV status

In the immediate postpartum period, the goal is to reduce MTCT by minimising newborn exposure to maternal blood and body fluids and by providing ARV prophylaxis to the newborn. When HIV testing is unavailable or the mother's HIV status is unknown, newborn care should follow national or local policy.

- Newborns of mothers with unknown HIV status should be tested as soon as possible after birth, if the mother consents.
- In some high-prevalence settings, national policy could recommend that all babies be given a single oral dose of nevirapine 2 mg/kg liquid suspension as soon as possible after birth, if the mother consents, whether or not the mother has been tested for HIV.
- The mother should receive counselling about feeding her infant, as described in *Module 4, Infant Feeding in the Context of HIV Infection.*

Trainer Instructions

Lead an interactive discussion based on the exercise below.

Exercise 3.4 Immediate newborn care of infants who are HIV-exposed: case studies	
Purpose	To review ARV prophylaxis and newborn care of infants who are HIV-exposed.
Duration	20 minutes
Introduction	Tell the participants that this exercise will serve as a review of ARV prophylaxis and postnatal care of infants.
Activities	▪ Distribute copies of the case studies to the participants. ▪ Make sure all participants have a pencil or pen. ▪ Ask participants to take five minutes to read the case studies. ▪ Instruct participants to write out their answers on a piece of paper. ▪ Let participants know that the case studies will not be collected but will be reviewed as a group. ▪ Lead a group discussion of each case study.
Debriefing	▪ Ask participants how they felt about providing answers to the case study. ▪ Ask participants whether any areas in the module need clarification. ▪ Answer any questions.

Exercise 3.4 Immediate newborn care of HIV-exposed infants: case studies

Case study 1

Deborah has just delivered her son, William. She tested HIV-positive during labour.

What HIV-specific infant interventions are required after the birth?

What are the components of follow-up care for William?

How can you help Deborah manage ongoing HIV-related care for herself and her infant?

Case study 2

Samantha, the newborn daughter of Consuelo (who is HIV-positive), is irritable and cries often. Consuelo's mother-in-law, who is visiting her at the facility and will be helping care for the infant after discharge, is worried. You overhear her repeatedly telling Consuelo that the baby needs breastmilk and that the breastmilk substitute is not satisfying the baby.

What can you do to help Consuelo at this stressful time?

What support will Consuelo need from the PMTCT programme to continue using breastmilk substitute after discharge?

Home birth case study

Louisa was diagnosed as HIV-positive during her one ANC visit prior to delivery at home. She has returned to the health centre 6 days after the birth of Teresa, her daughter. The baby appears to be happy, well hydrated, and thriving. Louisa remains convinced she is not infected with HIV and that the baby is not at risk. In fact, she did not give the NVP syrup to Teresa because the baby "didn't need it" and Teresa is breastfeeding.

Is this a typical response in your setting?

What services would you offer this mother?

What follow-up and referrals are necessary for this mother and her infant?

How will you deal with her denial of her diagnosis and risk for her infant?

Trainer Instructions

Slides 38, 39, and 40

Summarise the key points of this module from the box below.

Module 3: Key Points

- Integrating PMTCT services into the essential package of ANC services promotes improved care for all pregnant women and provides the best opportunity for a successful PMTCT programme.
- Specific interventions to reduce MTCT include ARV treatment and prophylaxis, safer delivery procedures, and counselling and support for safe infant feeding.
- Using antiretroviral drugs for treatment and prophylaxis reduces the risk of MTCT. Longer-course combination regimens are more effective, but short-course prophylaxis regimens may be more feasible in some resource-constrained settings.
- PCP prophylaxis and the prevention and treatment of TB and malaria are part of comprehensive care for mothers infected with HIV and their infants.
- Safer delivery procedures include avoiding unnecessary invasive obstetrical procedures and offering the option of elective caesarean section when safe and feasible.
- Infant-feeding options to minimise the risk of MTCT require support and guidance throughout ANC, labour and delivery and postpartum.

APPENDIX 3-A Antiretroviral prophylaxis regimens to prevent MTCT

HIV-related treatment, care and support must be provided during the antenatal and postpartum periods. All HIV-exposed infants should be followed-up for diagnosis of HIV, prophylaxis of opportunistic infection and treatment, care and support.

All regimens are administered by mouth. Paediatric formulations are needed for all infant regimens. Efforts must be made to monitor for side effects and support maternal infant adherence.

COURSE	ANTENATAL	INTRAPARTUM	POSTPARTUM	POSTNATAL
Zidovudine (ZDV) and nevirapine (NVP)	**Mother:** ZDV 300 mg twice a day starting at 28 weeks or as soon as possible thereafter	**Mother:** ZDV 300 mg at onset of labour and every 3 hours until delivery and single-dose NVP 200 mg at onset of labour OR ZDV 600 mg at onset of labour	None	**Infant:** NVP 2mg/kg oral suspension immediately after birth and ZDV 4 mg/kg twice a day for 7 days OR NVP 2 mg/kg oral suspension immediately after birth
ZDV	**Mother:** ZDV 300 mg twice a day starting at 28 weeks or as soon as possible thereafter	**Mother:** ZDV 600 mg at onset of labour OR ZDV 300 mg at onset of labour and every 3 hours until delivery	None	**Infant:** ZDV 4 mg/kg twice a day for 7 days OR ZDV 2 mg/kg 4 times a day for 7 days
ZDV and NVP for infant (when mother has received no ARV prophylaxis)	None	None	None	**Infant:** NVP 2 mg/kg oral suspension immediately after birth and ZDV 4 mg/kg twice a day for 7 days. When ZDV oral suspension not available NVP 2 mg/kg as soon as possible after delivery and a dose of NVP 72 hours after birth
NVP	None	**Mother:** Single-dose NVP 200 mg at onset of labour	None	**Infant:** NVP 2 mg/kg oral suspension immediately after birth
ZDV and lamivudine (3TC)	**Mother:** ZDV 300 mg and 3TC 150 mg twice a day starting at 28 weeks or as soon as possible thereafter	**Mother:** ZDV 300 mg every 3 hours until delivery and 3TC 150 mg every 12 hours until delivery	**Mother:** ZDV 300 mg and 3TC 150 mg twice a day for 7 days	**Infant:** ZDV 4 mg/kg and 3TC 2 mg/kg twice a day for 7 days

= First choice regimen

APPENDIX 3-A Antiretroviral prophylaxis regimens to prevent MTCT *(continued)*

COURSE	ANTENATAL	INTRAPARTUM	POSTPARTUM	POSTNATAL
ZDV and 3TC	None	**Mother:** ZDV 600 mg and 3TC 150 mg at onset of labour followed by ZDV 300 mg every 3 hours and 3TC 150 mg every 12 hours until delivery	**Mother:** ZDV 300 mg and 3TC 150 mg twice a day for 7 days	**Infant:** ZDV 4 mg/kg and 3TC 2 mg/kg twice a day for 7 days
ZDV + 3TC + saquinavir (SQV/r) * (Consider for MTCT prophylaxis in women not needing ARV therapy)	**Mother:** ZDV 300 mg, 3TC 150 mg and SQV/r 1000 mg/100 mg twice a day starting at 36 weeks or as soon as possible thereafter	**Mother:** Continue antenatal dosing schedule	None	**Infant:** NVP 2 mg/kg oral suspension immediately after birth OR ZDV 4 mg/kg twice a day for 7 days OR NVP 2 mg/kg oral suspension immediately after birth and ZDV 4 mg/kg twice a day for 7 days
ZDV or stavudine (d4T) + 3TC + NVP † (This treatment regimen in pregnant women also provides MTCT prophylaxis.)	**Mother:** ZDV 300 mg and 3TC 150 mg and NVP 200 mg twice a day OR d4T 40 mg, 3TC 150 mg and NVP 200 mg twice a day starting at 36 weeks or as soon as possible thereafter	**Mother:** Continue antenatal dosing schedule	None	**Infant:** NVP 2 mg/kg oral suspension immediately after birth OR ZDV 4 mg/kg twice a day for 7 days OR NVP 2 mg/kg suspension immediately after birth and ZDV 4 mg/kg twice a day for 7 days

* In women who do not require ARV, alternative triple-combination regimens for MTCT prophylaxis may be considered. If the woman is in the third trimester of pregnancy, these regimens may include ZDV + 3TC + nelfinavir (NFV) or ZDV + 3TC + efavirenz (EFV).

† In women who require ART, this is the recommended first-line regimen. However, in the third trimester of pregnancy, a regimen consisting of ZDV (or d4T) + 3TC + EFV may be considered.

Clinical Situation	Recommendation
A: HIV-infected women with indications for initiating ARV treatment[1] who may become pregnant	**First-line regimens:** *ZDV + 3TC + NVP or d4T + 3TC + NVP* Efavirenz (EFV) should be avoided in women of childbearing age, unless effective contraception can be assured. Exclude pregnancy before starting treatment with EFV.
B: HIV-infected women receiving ARV treatment who become pregnant	**Women** ▪ Continue the current ARV regimen[2] unless it contains EFV. If it does, substitution with NVP or a PI should be considered if in the 1st trimester. ▪ Continue the same ARV regimen during the intrapartum period and after delivery. **Infants** ▪ If born to women receiving either 1st or 2nd-line ARV regimens: 1-week ZDV OR single-dose NVP OR 1-week ZDV and single dose NVP
C: HIV-infected pregnant women with indications for ARV treatment[1]	**Women** ▪ Follow the treatment guidelines as for non-pregnant adults except that EFV should not be given in the 1st trimester. ▪ First line regimens: ZDV + 3TC + NVP or d4T + 3TC + NVP ▪ Consider delaying therapy until after the 1st trimester, although in severely ill women the benefits of early therapy clearly outweigh the potential risks. **Infants** ▪ 1-week ZDV OR single-dose NVP OR 1-week ZDV and single-dose NVP.

APPENDIX 3-B Clinical situations and recommendations for the use of antiretroviral drugs in pregnant women and women of child-bearing potential in resource-constrained settings

Clinical Situation	Recommendation
D: HIV-infected pregnant women without indications for ARV treatment[1]	**First-choice regimen:** *ZDV and NVP* **Women** ▪ ZDV starting at 28 weeks or as soon as possible thereafter. Continue ZDV at the same dose in labour. In addition, women should receive single-dose NVP at the onset of labour. **Infants** ▪ Single-dose NVP and 1-week ZDV[3]
	Alternative regimen: *NVP only* **Women** ▪ Single-dose NVP **Infants** ▪ Single-dose NVP
	Alternative regimen: *ZDV only* **Women** ▪ ZDV starting at 28 weeks or as soon as possible thereafter. Continue in labour. **Infants** ▪ 1-week ZDV[3]
	Alternative regimen: ZDV + 3TC **Women** ▪ ZDV + 3TC starting at 36 weeks or as soon as possible thereafter. Continue in labour and for 1 week postpartum. **Infants** ▪ 1-week ZDV + 3TC
E: HIV-infected pregnant women with indications for starting ARV treatment[1] but treatment is not yet available	Follow the recommendations in Situation D, but preferably use the most efficacious regimen that is available and feasible.
F: HIV-infected pregnant women with active tuberculosis	If ARV treatment is initiated, consider[4]: (ZDV or d4T) + 3TC + SQV/r. If treatment is initiated in the third trimester (ZDV or d4T) + 3TC + EFV can be considered. If ARV treatment is not initiated, follow the recommendations in Situation D.

APPENDIX 3-B Clinical situations and recommendations for the use of antiretroviral drugs in pregnant women and women of child-bearing potential in resource-constrained settings *(continued)*

Clinical Situation	Recommendation
G: Pregnant women of unknown HIV status at the time of labour or women in labour known to be HIV-infected who have not received ARV drugs before labour	If there is time, offer HIV testing and counselling to women of unknown status and if positive, initiate intrapartum ARV prophylaxis. **Women** ▪ Single-dose NVP. If in advanced labour do not give the dose but follow the recommendations in Situation H. **Infants** ▪ Single-dose NVP
	Women ▪ ZDV + 3TC in labour and 1-week ZDV + 3TC postpartum **Infants** ▪ 1-week ZDV+3TC If there is insufficient time for HIV testing and counselling during labour, then offer testing and counselling as soon as possible postpartum. Follow the recommendations in Situation H for women testing positive postpartum.
H: Infants born to HIV-infected women who have not received any ARV drugs	**Infants** ▪ Single-dose NVP as soon as possible after birth and 1-week ZDV If the regimen is started more than 2 days after birth, it is unlikely to be effective.

APPENDIX 3-B Clinical situations and recommendations for the use of antiretroviral drugs in pregnant women and women of child-bearing potential in resource-constrained settings *(continued)*

[1] WHO recommendations for initiating ARV treatment in HIV-infected adolescents and adults. If CD4 testing is available it is recommended to offer ARV treatment to patients with: WHO Stage IV disease irrespective of CD4 cell count, WHO Stage III disease with consideration of using CD4 cell counts less than 350 10^6 cells/L to assist decision-making and WHO Stage I and II disease in the presence of a CD4 cell count less than 200 10^6 cells/L. If CD4 testing is unavailable, it is recommended to offer ARV treatment to patients with WHO Stage III and IV disease irrespective of total lymphocyte count or WHO Stage II disease with a total lymphocyte count less than 1200 10^6 cells/L.

[2] Conduct clinical and laboratory monitoring as outlined in the 2003 revised WHO treatment guidelines.

[3] Continuing the infant on ZDV for four to six weeks can be considered if the woman received antepartum ARV drugs for less than four weeks.

[4] ABC can be used in place of SQV/r; however, experience with ABC during pregnancy is limited. In the rifampicin-free continuation phase of tuberculosis treatment, an NVP-containing ARV regimen can be initiated.

Source: WHO. 2004. *Antiretroviral drugs for treating pregnant women and preventing HIV infection in infants: guidelines on care, treatment and support for women living with HIV/AIDS and their children in resource-constrained settings.* pp 39–41.